

METHOD OF MEDICAL IMAGING USING COMBINED NEAR INFRARED  
DIFFUSIVE LIGHT AND ULTRASOUND

ABSTRACT

[0069] An image reconstruction process using a combined near infrared and ultrasound technique and its utility in imaging distributions of optical absorption and hemoglobin concentration of lesions is described. In the image reconstruction process, the tissue volume is segmented, based on initial co-registered ultrasound measurements, into a lesion region and a background region. Reconstruction is performed using a finer grid for the lesion region and a relatively coarser grid for the background tissue. In one embodiment, image reconstruction is refined by optimizing lesion parameters measured from ultrasound images.